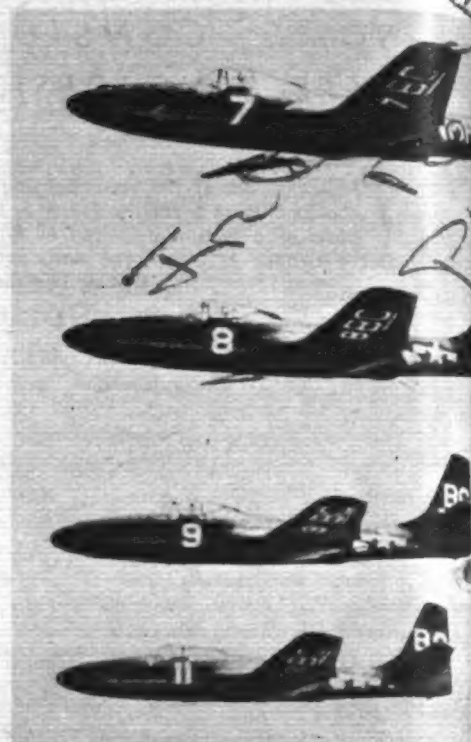


acknowledging the merits of these admirable "general-purpose" designs, however, it is wise to reflect that in the late war the R.A.F. was somewhat embarrassed (to cite but one instance) by the enemy's employment of specialized, high-altitude bombers, cruising over this country and the Middle East at levels well above the ceiling of defensive fighters. Hasty modification and stripping of standard Spitfires and Mosquitoes met with very limited success against these annoying marauders, and the belated outcome was the Welkin—perhaps the most highly specialized machine ever built to R.A.F. requirements.

The *raison d'être* of all fighter aircraft being the destruction of the enemy in the air, it follows that design criteria should be (1) the nature of the opposition and (2) the circumstances in which this is likely to be met—whether at short or long range, as the result of interception or patrol, by day or night, in fair weather or foul, at high, medium or low altitude. This will postulate the most intimate collaboration between Intelligence and those authorities responsible for stating technical and operational requirements. Had the Americans been aware in the early days of the Pacific war that Japanese fighters possessed such powers of manoeuvrability (achieved largely at the cost of vulnerability) their design policy might well have taken a different turn.

Inadequate technical intelligence and the inability to predict the course of possible campaigns is further prolonging the life of the general-purpose or "good all-round" fighter—a class which is doubly favoured in being inherently suitable for the attack of ground targets. That this breed will survive for some years, especially in Naval air arms and for Army support, is not to be doubted, but that it will be increasingly handicapped when matched with more specialized



McDonnell Phantoms of a U.S. Marine Squadron

## FIGHTERS



Republic Thunderjets in service with the U.S.A.

machines is equally certain. The tendency towards specialization is exemplified in the new interceptors; the escort, or "penetration," fighters; bomber-defence "parasite" fighters; night and all-weather fighters; and marine, or, more descriptively, water-based fighters. The interceptor is typically a single-seater, in which endurance is subservient to rate and angle of climb, ceiling and speed; it will generally have turbojet power with water injection, after-burning or auxiliary rocket boost. Pure-rocket interceptors, like the Me 163 of late war years, may be revived for the defence of specific targets.

Escort fighters present more serious design problems, for not only is long range demanded, but these aircraft, with more than half their heavy fuel load remaining, will be called upon to engage the enemy's lightly loaded interceptors. Single or twin-jet single-seaters will be preferred.

The bomber-defence fighter (if current tests with the McDonnell XF-85 "Parasite" warrant its continued development), will be a very small, light, single-jet machine suitable for internal, or semi-internal, stowage in the heaviest long-range bombers. An XF-85 can be carried in each of the three 16-ft bomb bays of the Brabazon-size Convair B-36.

For night and all-weather fighting a machine with twin turbojets, possibly with one of the auxiliary power systems mentioned for the interceptor, would appear to be ideal. Elaborately equipped with electronic aids and anti-icing gear, such fighters will carry a crew of two or three and will be suitable for "intruder" operations.

The water-based fighter, exemplified by the British Saunders-Roe S.R./A1, is characterized by unique operational flexibility.

